IN THE SPECIFICATION

Please amend the paragraph beginning at page 3, line 23 through page 4, line 16, as follows:

According to another aspect of the present invention, there is provided an apparatus for generating three-dimensional shape data of analytic surface expression, the apparatus comprising: a storage ~~configure~~ configured to store polygonal shape data in which at least a portion of a shape is approximated by a combination of a plurality of polygons; a shape data I/O interface ~~configure~~ configured to read the polygonal data from the storage; and an analytic surface fitting device coupled to the shape data I/O interface, including: a generation device configured to generate a set of polygons from the polygonal shape data, each of the polygons satisfying a predetermined selection criterion; an analytic surface computation device configured to compute a shape parameter of an analytic surface, the analytic surface being fitted in place of the obtained set of polygons; and a fitting process controlling device configured to control a fitting process by activating the generation device and analytic surface computation device based on a predetermined termination condition.

Please amend the paragraph beginning at page 4, line 17 through page 5, line 8, as follows:

According to still another aspect of the present invention, there is provided an apparatus for generating three-dimensional shape data of analytic surface expression, the apparatus comprising: a storage configured to store polygonal shape data in which at least a portion of a shape is approximated by a combination of a plurality of polygons; a shape data I/O interface ~~configure~~ configured to read the polygonal data from the storage; and analytic surface fitting means coupled to the shape data I/O interface, including: generation means for generating a set of polygons from the polygonal shape data, each of the polygons satisfying a

predetermined selection criterion; computation means for computing a shape parameter of an analytic surface, the analytic surface being fitted in place of the obtained set of polygons; and fitting process controlling means for controlling a fitting process by activating the generation means and computation means based on a predetermined termination condition.

Please amend the paragraph beginning at page 18, line 22 through page 19, line 9, as follows:

A termination condition of the above fitting process is not limited only such a condition in which all of the polygons are fitted to any one of analytic surfaces, but is adequately defined, for example, depending on at least one condition of a given fitting error, the amount of the shape data in analytic surface expression form, and the corresponding amount of the polygonal shape data. This termination condition may ~~permits~~ permit the polygon of non-fitting when, in the state that the fitting error goes within the allowable range and the fitting process can be terminated, the non-fitting polygon data has an advantage over the data amount. In this case, the fitting process is terminated without fitting the non-fitting polygon to the analytic surface.

Please amend the paragraph beginning at page 20, lines 6-15 as follows:

In boundary analytic curve fitting step S31, fitting is done so that the boundary between the fitted surfaces becomes a straight line or arc. After this process, the shape expression becomes simpler, and high-speed processing can be expected for the final shape data. This process is performed by the boundary of fitted surface processing module 136. ~~Suchlike~~ Such a like analytic curve is not limited only to said line or arc. The analytic curve may include various [[kind]] kinds of quadratic ~~curve~~ curves.

Please amend the paragraph beginning at page 29, line 18 through page 30, line 5, as follows:

FIG. [[25]] 27 shows an example of polyhedron data of a three-dimensional shape provided by, e.g., VRML. In this polyhedron data, analytic surfaces (plane, cylindrical surface, conic surface, spherical surface, and the like) are accurately fitted (without any errors) as a result of the analytic surface fit process (step S12), as shown in FIG. 26. In this case, it is advantageous to conduct an interference check using the fitted analytic surfaces in terms of both the processing speed and accuracy. Therefore, when analytic surfaces are accurately fitted, i.e., when no errors are produced upon fitting analytic surfaces, the subsequent processes (interference check) are executed using the fitted analytic surfaces independently of the computation mode selected.

Please amend the paragraph beginning at page 31, line 26 through page 32, line 7, as follows:

It is checked in step [[S15]] S20 if the interference check process is to end. If interference check is redone under different conditions in accordance with user's instruction or the like, the flow returns to step S15. At this time, the analytic surface fit result recorded in the magnetic disk 6 can be used, as described above. Without using the recorded result, a new analytic surface fit process under different conditions may be done.

Please amend the paragraph beginning at page 32, lines 20-26, as follows:

FIGS. 29A and 29B are views for explaining such case. FIGS. 29A and 29B show the fitting state (shaft-hole pair) of a shaft (cylindrical surface) and hole when viewed from the axial direction of the hole. In practice, the hole diameter nearly matches the shaft diameter, but the shaft is slightly smaller than the hole for the sake of simplicity.

Please replace the Abstract on page 41, as indicated on the page attached hereto.